

INCIDENT COMMAND SYSTEM

LAW ENFORCEMENT MUTUAL AID PLAN (SAR) ANNEX



OPERATIONAL SYSTEM DESCRIPTION

SWIFTWATER/FLOOD SEARCH AND RESCUE

JANUARY 24, 2001

ACKNOWLEDGMENT

This document is the product of a four-year cooperative effort between California Law Enforcement and Fire Agencies, coordinated by the Governor's Office of Emergency Services.

The Governor's Office of Emergency Services gratefully acknowledges the valuable input and collective expertise from the following members of the Law Enforcement and Fire Agencies who served on the SF SAR Working Group

Jay Bowdler, Captain – CHAIR
Sacramento Fire Department

Ronald Perret, Deputy Chief
CO-CHAIR
San Bernardino County
Sheriff's Office

Ron Allison, Sergeant
Glendale Police Department

Terry Ascherin, Deputy
Los Angeles County
Sheriff's Department

Dan Arnold, Engineer
Los Angeles Fire Department

John Boyle, Captain
Los Angeles County
Fire Department

Arnie Brockmire, Deputy
Tuolumne County
Sheriff's Department

Alan Campbell, Engineer
Ventura County
Fire Protection District

Len Chesmore, Assistant Chief
Fire and Rescue Branch,
Governor's Office of
Emergency Services

Chuck Dunbar, Flight Officer
California Highway Patrol

Ronald Edrozo, Captain
San Diego Fire and
Life Safety Service

Don Florence, Engineer
Marin County Fire Department

Micky Gallagher, Captain
Los Angeles County Lifeguards

Roger Greening, Captain
Fresno County Sheriff's Department

Tim Hagel, Senior Deputy
Ventura County
Sheriff's Department

Don Hayden, Battalion Chief
Orange County Fire Authority

Mike Hazlett, Engineer
Sacramento Metropolitan
Fire District

Wayne Hess, Firefighter
Riverside Fire Department

Ron Hurd, Lieutenant
Santa Barbara County
Sheriff's Department

Roger Kendle, Deputy
Alameda County Sheriff's Office

Mike Koury, Captain
Riverside Fire Department

Marshall McKee, Lieutenant
Oakland Fire Department

Vaughan Miller, Captain
Ventura County
Fire Protection District

Stan Moe, Commander
Kern County Sheriff's Department

Thomas Muntz, Chief Pilot
California Highway Patrol

Kevin Nestor, Battalion Chief
Ventura County
Fire Protection District

Tom Neville, Firefighter
Sacramento
Metropolitan Fire District

Robert Pacheco, Sergeant
Sonoma County
Sheriff's Department

Marshall Parks, Lieutenant
San Diego Fire and
Life Safety Service

Donald Reyes, Apparatus Operator
Los Angeles Fire Department

Jeff Schreiber, Firefighter
Menlo Park Fire Protection District

Matt Scharper, Deputy Chief
Law Enforcement Branch
Governor's Office of
Emergency Services

Jim Scruggs, Deputy
Tuolumne County
Sheriff's Department

Jim Segerstrom
OES Technical Specialist

Steve Shomber, Captain
Orange County Fire Authority

Nicole Stanich
Fire and Rescue Branch,
Governor's Office of
Emergency Services

James P. Troy, Lieutenant
Oakland Fire Department

Frank Underlin, Senior Deputy
Ventura County
Sheriff's Department

Jack Wise, Captain
Former CO-CHAIR
Los Angeles Fire Department

TABLE OF CONTENTS

INTRODUCTION.....	1
INITIAL RESPONSE	2
UNIFIED COMMAND	2
ICS MODULAR DEVELOPMENT	2
INITIAL RESPONSE (Figure 1).....	3
REINFORCED RESPONSE (Figure 2).....	4
MULTI-GROUP/DIVISION RESPONSE (Figure 3)	5
MULTI-BRANCH RESPONSE (Figure 4)	6
GLOSSARY OF TERMS	7
RESOURCE TYPING	9
TEAM (Appendix A).....	9
FLOOD EVACUATION BOAT (Appendix B).....	10
AIR RESOURCE / HELICOPTER (Appendix C).....	11
AIR RESOURCE / PILOT & CREW (Appendix D).....	12
ADDITIONAL SF SAR RESOURCES (Appendix E).....	13
TRAINING, SKILLS, & EQUIPMENT LIST	15
CONTENTS.....	16
INTRODUCTION	16
SF SAR TEAM SKILLS	17
SF SAR TEAM TRAINING.....	18
SF SAR AIR RESOURCE TYPING	19
SF SAR AIR RESOURCE PILOT & CREW.....	20
SF SAR DECONTAMINATION.....	21
SF SAR TEAM EQUIPMENT	23
OPERATIONAL CHECKLIST.....	27

INTRODUCTION

Local and widespread swiftwater and flood emergencies often occur in California. Many of these incidents strain local resources creating the need to request mutual aid resources. This document focuses on the development and identification of specific swiftwater/flood search and rescue (SF SAR) resources available to local agencies, through the California Mutual Aid System. This information is duplicated in FIREScope documents ICS US&R 120-2 and ICS-SF-SAR 020-1.

This document is intended to provide guidance and develop recommendations for California's Swiftwater/Flood Rescue Resources, including, but not limited to: organizational development, resource typing, training, and equipment; recommend procedures and guidelines of swiftwater/flood rescue operations within the operational area concept consistent with the Standardized Emergency Management System, as they pertain to swiftwater/flood rescue incidents; develop recommendations for the structure, training, equipment, and operational guidelines for California's Swiftwater/Flood Rescue resources; and to develop protocol recommendations for integration of all Swiftwater/Flood Rescue resources during operations, within Incident Command System guidelines.

It is the responsibility of agencies responding to California Mutual Aid, Swiftwater / Flood Search and Rescue requests, to provide qualified personnel and equipment that meet or exceed the recommended level of skills and capabilities stipulated in this document.

INITIAL RESPONSE

The first arriving public safety officer will direct initial swiftwater/flood search and rescue (SF SAR) operations. This officer will assume initial command of the operation as the Incident Commander (IC). Subsequent changes in the incident command structure will be based on the needs of the incident, with consideration of jurisdictional responsibilities, established agreements, state and local statutes and shall be accomplished by following established ICS procedures.

Additional resources, specifically trained and equipped for swiftwater/flood search and rescue operations may be required. These SF SAR resources may be assigned as a single resource or grouped together to form Task Forces.

Due to the unique hazards and complexity of swiftwater/flood search and rescue incidents, the IC may require a variety of different multi-disciplinary resources to accomplish the SF SAR mission (APPENDIX E. Additional Swiftwater/Flood Search and Rescue Resources).

SF SAR resources have been categorized or “typed” (APPENDIX A. Swiftwater/Flood Search and Rescue Resource Typing and APPENDIX B. FEB Typing). Typing reflects identified operational capabilities, based on specialized training, skills and equipment. This typing is based on team qualifications, available equipment and training, as needed for safe and efficient rescue operations for identified SF SAR tasks.

Swiftwater/flood search and rescue incidents may occur that will require rescue operations that exceed on-scene personnel capabilities. When the magnitude or type of incident exceeds that capability level, the IC will have the flexibility to conduct search and rescue operations in a safe and appropriate manner until adequate resources can be obtained or the incident is terminated.

UNIFIED COMMAND

A Unified Command should be implemented at SF SAR incidents when multiple agencies or jurisdictions with statutory or political authority and financial responsibility are involved. Unified Commanders involved in a Unified Command shall be co-located. A single Command Post is the best method to ensure effective communications, coordination of resources, and overall operational management of the incident.

ICS MODULAR DEVELOPMENT

The flexibility and modular expansion design of the Incident Command System provides an almost infinite number of ways SF SAR resources can be arranged and managed. Refer to the Law Enforcement Guide for Emergency Operations or the fire service Field Operations Guide (ICS-420-1).

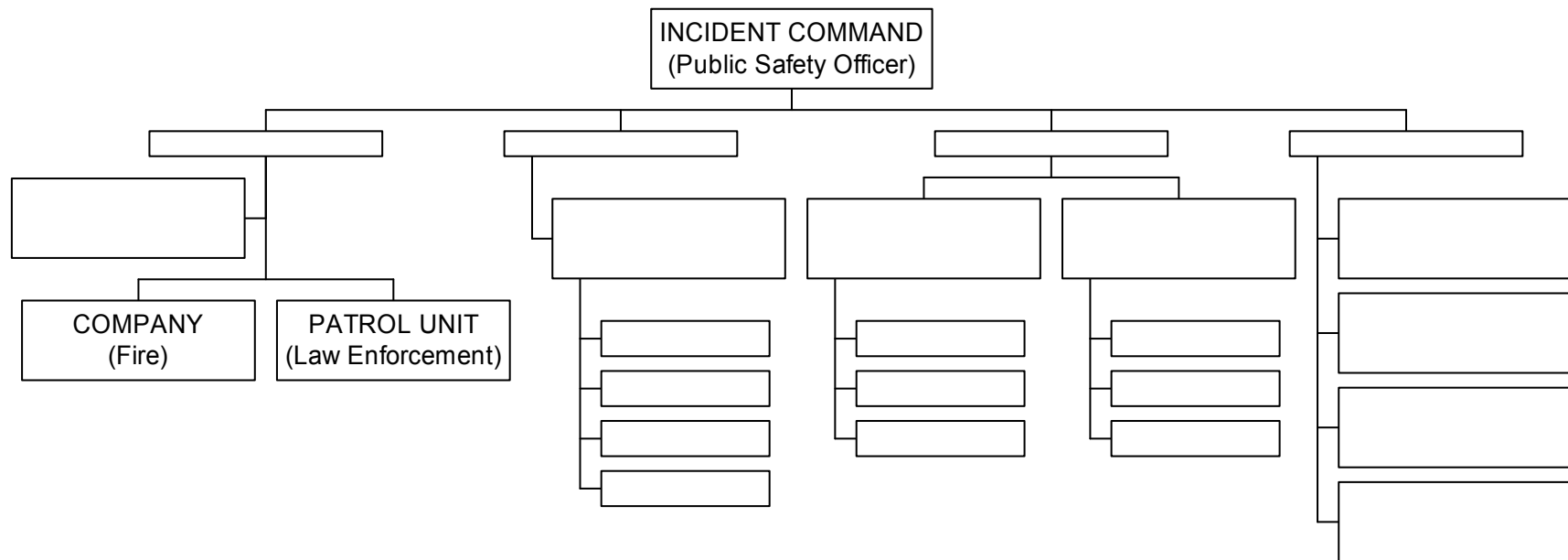
INITIAL RESPONSE

Figure 1: INITIAL RESPONSE ORGANIZATION (EXAMPLE)

The initial public safety officer on-scene will assume command of the incident as the Incident Commander (IC). This officer will manage the initial response resources.

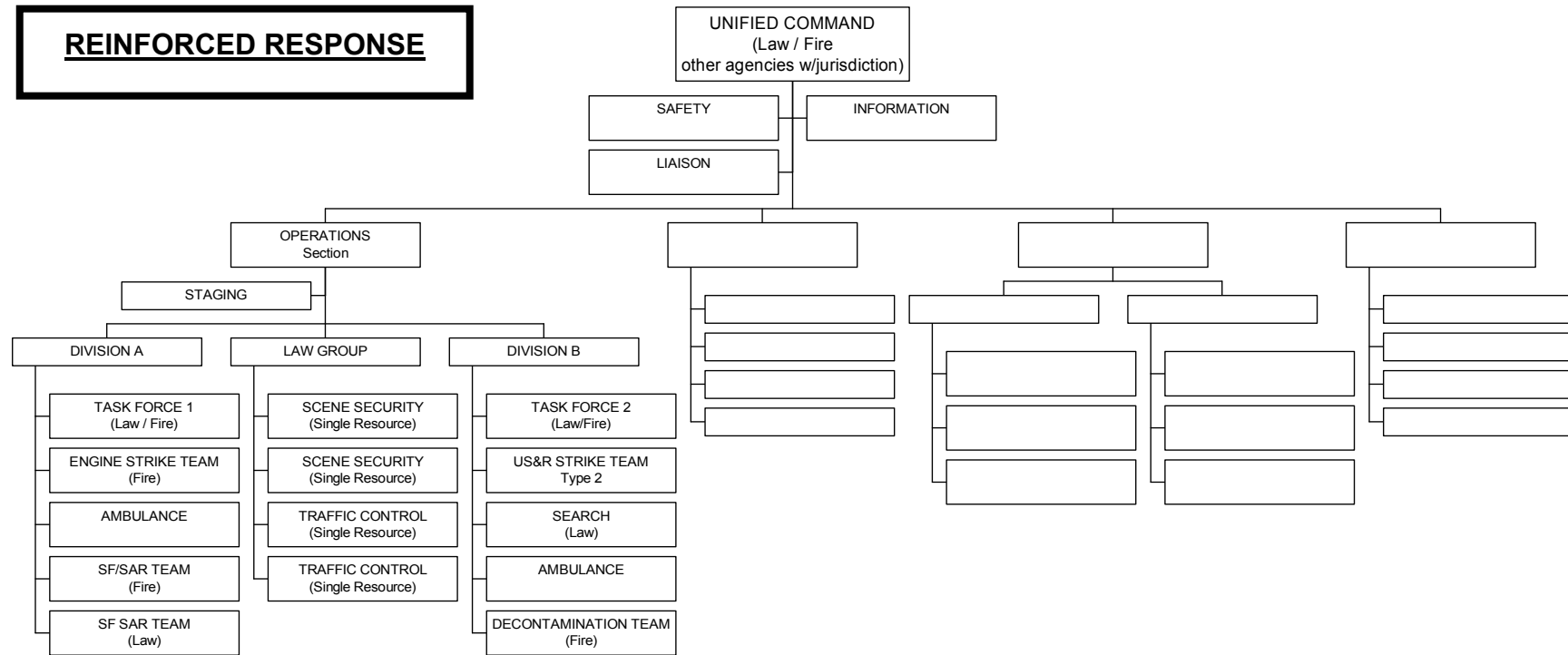


Figure 2: REINFORCED RESPONSE ORGANIZATION (EXAMPLE)

Additional Law Enforcement, local Fire Department Engine and Truck companies, and Mutual Aid resources have arrived. The IC forms a unified command with the designated public safety officials on scene with a Safety Officer, Information Officer and Liaison Officer designated. A Staging Area has been established for arriving resources. The incident is geographically divided into divisions under an Operations Section. The initial Fire Department resources and/or Law Enforcement SAR Teams are formed into Task Forces. Additional Law Enforcement resources form the Law Group.

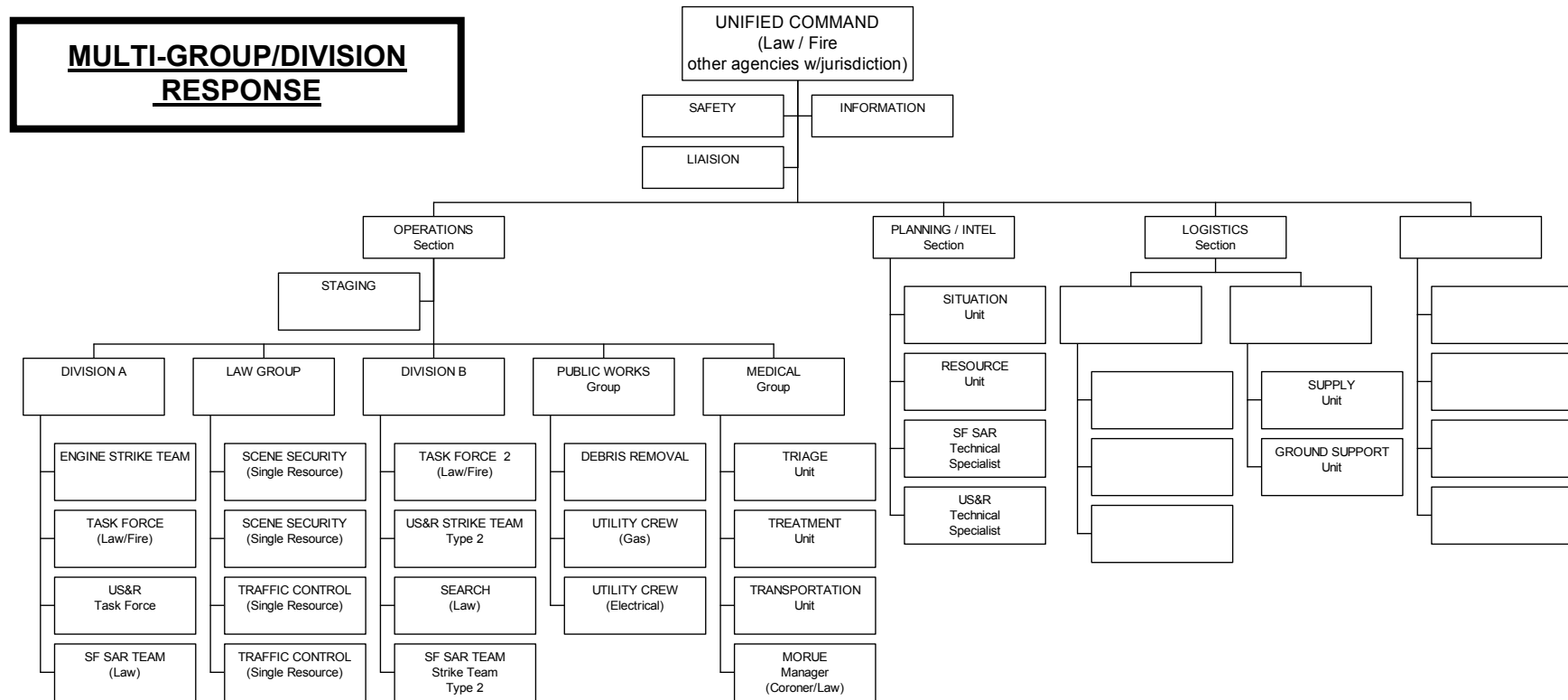


Figure 3: MULTI GROUP/DIVISION RESPONSE ORGANIZATION (EXAMPLE)

Planning/Intel and Logistics Sections have been established. Multiple Groups and Divisions have been formed to better manage the incident.

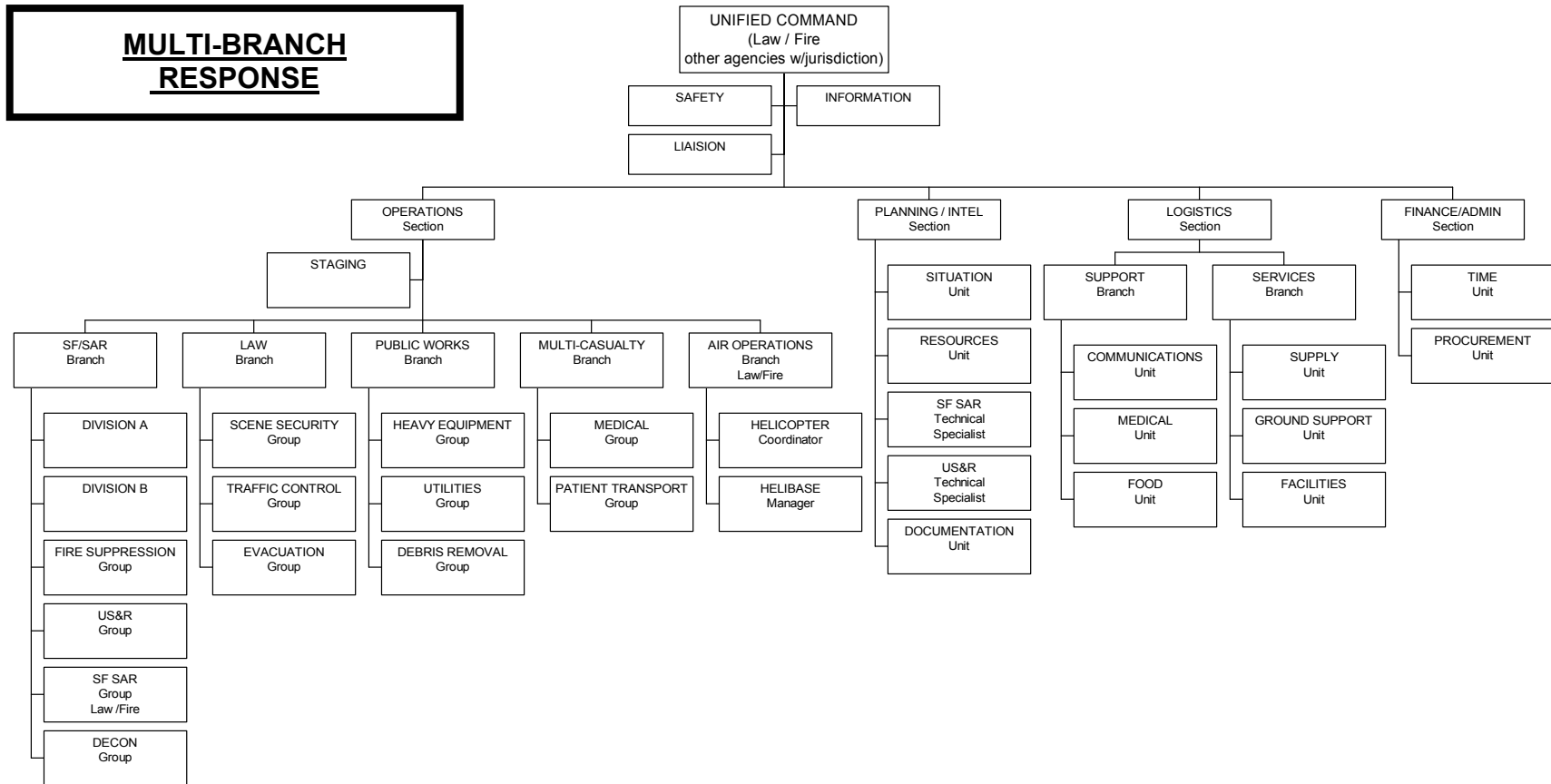


Figure 4: MULTI BRANCH ORGANIZATION (EXAMPLE)

The Incident Commander has assigned Logistics and Finance/Administration Section.

GLOSSARY OF TERMS

Air Resources

Helicopters staffed by crews trained in search and rescue operations. Ordered by type and class as listed (APPENDIX C).

Boat drive - air.

A boat with a propulsion system using an aviation propeller or a ducted fan to generate thrust from the engine having an on-plane draft of 0" to 12". The typical boats of this category are the "Florida Swamp" boats and surface effect boats.

Boat drive - jet.

A boat with a propulsion system using a water pump to generate thrust having an on-plane draft of 6" to 12". They can be susceptible to damage from floating debris.

Boat drive - propeller.

A boat with a propulsion system using a propeller to generate thrust having an on-plane draft of 18" to 24".

Boat, non-powered.

A non-motorized vessel capable of safely transporting rescuers or victims (e.g. raft, skiff, johnboat etc.).

Boat, powered.

A motorized vessel capable of safely transporting rescuers or victims, (e.g. IRB: "Inflatable Rescue Boat", RHIB: "Rigid Hull Inflatable Rescue Boat", Rigid Hull Boat, PWC: "Personal Water Craft", "Airboat", etc.).

Decontamination.

Action required to chemically change or physically remove the contaminants from personnel and equipment.

Flood Evacuation Boat (FEB)

Resource with personnel trained to operate in floodwaters with the specific task of evacuating persons or small domestic animals from isolated areas (APPENDIX B. Flood Evacuation Boat Typing).

Helicopter Rescue Operational.

Swiftwater/Flood Search and Rescue personnel trained and equipped to work with helicopters and crew, for hoist, short haul-line victim extraction, rappel, or low level insertions.

IRB.

Inflatable rescue boat.

PFD.

Personal flotation device with a minimum U.S. Coast Guard rating of Type III or V.

PPE.

Personal protective equipment. For SF SAR personnel that includes a water helmet, a PFD, a whistle, a light, foot and hand protection, and thermal protection.

PWC.

Personal watercraft (water bike, jet ski).

RHIB.

Rigid hull inflatable boat.

Rigid Hull.

A boat constructed of wood, fiberglass, or aluminum with no inflated components.

SEMS.

“Standardized Emergency Management System.” California’s emergency management system that facilitates priority setting, interagency cooperation, and the efficient flow of resources and information. SEMS incorporates: The Incident Command System, Multi/Inter-Agency Coordination, Mutual Aid, and the Operational Area Concept.

SF SAR TEAM.

A Search and Rescue resource with specific equipment, training, and experience, in swiftwater/flood search and rescue.

Swiftwater.

Water that is moving fast enough to produce sufficient force to present a significant life and safety hazard to a person entering the water. The swiftwater classification scheme rates the complexity and danger of swiftwater from easiest (Class 1) to most difficult (Class 6) (American Whitewater Affiliation).

Training Levels:

Awareness: Knowledge based course of instruction, emphasizing hazards and personnel safety. Generally lecture only.

Operational: Participation based course of instruction; emphasizing personal safety, team safety and limited low risk victim rescue. The course generally includes objective evaluation and testing.

Technician: Performance based course of instruction emphasizing personnel safety, team safety, and mid to high-risk victim rescue. The course generally includes objective evaluation and testing.

APPENDIX A. Swiftwater/Flood Search and Rescue Resource Typing

	Type 1	Type 2	Type 3	Type 4
Type (Capabilities)	Manage search ops Power vessel ops In-water contact rescues Helicopter operational Technical rope systems HazMat Animal rescue EMS-ALS Communications Logistics Capable of 24hr operations	Manage search ops Power vessel ops In-water contact rescues Helicopter operational Technical rope systems HazMat Animal rescue EMS-BLS Capable of 24hr operations	In-water contact rescues Assist in search ops Non-power water craft HazMat Animal rescue EMS-BLS Capable of 24hr operations	Low Risk Land Based HazMat EMS-BLS Capable of 24hr operations

Resource	Component	Type 1	Type 2	Type 3	Type 4
Swiftwater/ Flood Search and Rescue Team	Equipment	Type 1 Inventory	Type 2 Inventory	Type 3 Inventory	Type 4 inventory
	Personnel	14 Member Team: 2 Managers 2 Squad leader 10 Personnel	6 Member Team: 1 Squad leader 5 Personnel	4 Member Team: 1 Squad leader 3 Personnel	3 Member Team: 1 Squad leader 2 Personnel
	Transportation	Equipment trailer Personnel transport vehicles	*	*	*

* Requests should include vehicle capabilities when necessary (i.e., four-wheel drive).

APPENDIX B. Flood Evacuation Boat Typing

Order these resources by type, quantity, hull design and power type if critical.

Type	Type 1	Type 2	Type 3	Type 4	Type 5
Minimum Victim Transport per Trip	• 5+	• 3 - 5	• 3	• 2	• 2
Special Needs and Notes	• May need launch ramp	• May need launch ramp	• Hand Launch	• Hand Launch	• Hand Launch
	Power Boat	Power Boat	Power Boat	• 2 Personal Water Craft (PWC)	• No Motor • Rafts, skiffs, johnboat, etc.

Resource	Component	Types				
		1	2	3	4	5
Flood Evacuation Boat	Equipment	FEB Inventory	FEB Inventory	FEB Inventory	FEB Inventory	FEB Inventory
	Minimum Personnel	2	2	2	2	2
	Transportation	*	*	*	*	*

* Requests should include vehicle capabilities when necessary (i.e., four-wheel drive).

APPENDIX C. Air Resource Typing

Helicopters staffed by personnel trained in search and rescue operations can be ordered through normal Mutual Aid Request procedures. Specify need such as search platform with lights and infrared detectors, hoist capability, swift water capability, etc.

Resource	Component	Types			
		1 (Heavy)	2 (Medium)	3 (Light)	4
Helicopter	Seats w/pilot	– 16	– 10	– 5	– 3
	Useful Load (lbs)	– 5000 lbs	– 2500 lbs	– 1200 lbs	– 600 lbs.
	Examples	– UH-60	– Bell 205, 412	– Bell 206, MD 500E, BO 105	– Bell 47 Does <u>not</u> meet mission requirements for external live load.

HELICOPTER Capability/Mission Selection Sheet

- *Communications
-VHF Programmable Radios
- *Over Water Survival Equipment
-PFD's for *air* crew and passengers
- ☐ Live Load *External Load Capable-
with rescue equipment
☐ Hoist
☐ Short Haul
- ☐ Sling Load
☐ Medical: BLS
☐ Medical: ALS
☐ Personnel Transportable (number of people)
☐ Usable Time (mission duration)
☐ Search/Observation

* Mandatory for aircraft

Mission Equipment Selection Sheet

- ☐ ALS
☐ BLS
☐ Basket (i.e. Stokes type litter)
☐ Cinch Collar
☐ Cinch Strap
☐ FLIR
☐ Night Illumination (1 million candle power +)
☐ PA
☐ Rescue Capture Ball
☐ Rescue Ring
☐ Short Haul System
☐ Sling Load Capability (in lbs.)
☐ Hoist Load Capability (in lbs.)

See next page for Pilot and Flight Crew Capabilities

APPENDIX D. Air Resource Typing (Pilot and Crew)**Pilot Capability**

External Load Capable

- ☐ Victim Location in Static Water
- ☐ Victim Location in Dynamic Water

- Must be a public service operator, who meets their respective agency's requirement or possesses a USFS, CDF, or OAS (Office of Aircraft Service) valid card.
- Pilot must have a minimum of swiftwater/flood rescue awareness or operational training along with training and experience in helicopter water rescue evolutions.

Flight Crew Capability

External Load Capable

- ☐ Victim Location in Static Water
- ☐ Victim Location in Dynamic Water

- Flight Crew should have a minimum of swiftwater/flood rescue awareness or operational training along with training and experience in helicopter water rescue evolutions. Aircrew performing water rescue operations must complete annual helicopter water rescue training.
- Areas to include helicopter orientation and safety, hand signals and communications, water rescue device orientation and operations and any additional individual agency specific or type specific requirements.

APPENDIX E. Additional Swiftwater/Flood Search and Rescue Resources**American Red Cross (ARC)**

The American Red Cross provides disaster victims assistance such as food, clothing, shelter, and supplemental medical. The ARC provides the emergency mass care to congregate groups and also provides individual/family assistance. Upon the request of government, resources permitting, the ARC may assist with warning, rescue, or evacuations.

Animal Rescue Team

A specialized resource having extensive experience and appropriate equipment required to support the rescue of small domestic pets and large animals' commonly encountered in rural settings. This resource may be available through the Mutual Aid request procedures.

California Conservation Corps (CCC)

A State agency that provides personnel for specific non-technical assignments during flood alerts or actual incidents. CCC personnel may be stationed near locations of anticipated problems, due to storm activity, high river tides, or heavy reservoir releases. This resource can be obtained through Mutual Aid request channels.

California Department of Forestry and Fire Protection (CDF)

A State fire agency capable of supplying ICS overhead teams, air assets, fire engines, crews, bulldozers, equipment, camp kitchens, trained personnel for technical or non-technical rescue, containment operations, and storm/flood watch patrols during emergency situations. This resource is available through Mutual Aid request procedures.

California National Guard

A State agency capable of providing heavy vehicle (2.5 and 5 ton) transportation needs, air assets, boats, bridging equipment, sheltering operations, and other equipment and personnel. They must be ordered through the Mutual Aid request procedure.

California Department of Fish & Game, U.S. Department of Fish & Wildlife

State and Federal resource capable of supplying boats with trained operators, that includes airboats. Orders for specialized equipment must be specific when requesting from this resource through the Mutual Aid request procedure.

Department of Water Resources Flood “Fight” Teams

The Department of Water Resources (DWR) is responsible for coordinating local, state, and federal flood operations. DWR can offer advice to local agencies about how to establish levee patrol, floodwater, place river flood staff gauges, and how to receive flood information from their Department. The Department can generally assist flood fighting in any area of the state with personnel and flood fighting materials for local agencies. Requests for Flood Fight crews shall be made through the DWR.

Heavy Equipment

Heavy equipment such as cranes, front loaders, and dump trucks are often needed in large quantities during regional water emergencies. They are normally available through local public works departments and private contractors (a pre-signed MOU is recommended). If additional heavy equipment resources are needed, they can be ordered through Mutual Aid request procedure.

Swiftwater / Flood Search Rescue Technical Specialist

A Swiftwater/Flood Rescue Technical Specialist may be requested to assist the incident management team with technical expertise in swiftwater/flood search and rescue. The specialist is normally assigned to the Planning Section. This resource is ordered through the Mutual Aid request procedure.

Search & Rescue Water Dogs

Dogs specifically scent certified in water, trained to search for and find drowning victims. Search and Rescue Water Dogs are ordered through the Mutual Aid request procedures.

Search Manager

A person qualified and capable of managing the specific search and rescue mission.

Salvation Army

During an emergency, the Salvation Army may be called upon to provide food, clothing, furniture, housing, emergency communication, mobile canteen services, and spiritual ministry for disaster victims. This is generally a local resource, however, may be requested through the Mutual Aid request procedure.

Structural/Soils Engineers

In most cases, responding resources will have access to local structural and soils engineers through their local agencies. Additional engineers may be ordered through the Mutual Aid request procedure.



INCIDENT COMMAND SYSTEM

SWIFTWATER/FLOOD SEARCH AND RESCUE

RECOMMENDED TRAINING, SKILLS, AND EQUIPMENT LIST

Also contained in FIREScope Document:
ICS-SF-SAR 020-1

January 24, 2001

CONTENTS

SF SAR TEAM SKILLS	17
SF SAR TEAM TRAINING.....	18
SF SAR AIR RESOURCE TYPING	19
SF SAR AIR RESOURCE PILOT & CREW	20
SF SAR DECONTAMINATION.....	21
SF SAR TEAM EQUIPMENT	23
OPERATIONAL CHECKLIST.....	27

INTRODUCTION

The following information supports the Incident Command System, Swiftwater/Flood Search and Rescue Operational System Description (previous section). This document recommends minimum skill levels, training requirements, and proper equipment. This information is duplicated in FIREScope document ICS-SF-SAR 020-1.

It is the responsibility of agencies responding to California Mutual Aid, Swiftwater/Flood Search and Rescue requests, to provide qualified personnel and equipment that meet or exceed the recommended level of skills and capabilities stipulated in this document.

SF SAR Team Skills

It is recommended that teams have the following skills. A number indicates the minimum number of members on the team with indicated skills. "X" indicates recommended skills for all team members.

	Swiftwater/Flood Search & Rescue Team				FEB
	Type 1	Type 2	Type 3	Type 4	
Animal Rescue	2	1	1		1
Class 3 paddle skills	X	X	X		
Communications skill (radios)	1				
Contact and Self Rescue Skills	X	X	X		
EMS-ALS capability	2				
EMS-BLS capability	X	X	X	X	X
Hazardous Materials	X	X	X	X	X
Helicopter/Aquatic Rescue operational skills	4	2			
Helicopter Operations Awareness	X	X			
Incident Command System (ICS)	X	X	X	X	X
Powered Boat Operator	4	2			2
SF SAR Management	X	X			
SF SAR Operations	X	X	X	X	X
Technical Rope Rescue Skills	X	X			
SCUBA Support	4*				

*** = Optional**

SF SAR Team Training

It is recommended that team personnel have completed the following training as indicated. A number indicates the minimum number of person(s) on a team with the indicated training. "X" indicates recommended training for all team members.

		SF SAR Type 1 Team Manager	Swiftwater/Flood Search & Rescue Team				FEB
			Type 1	Type 2	Type 3	Type 4	
1	Annual skills proficiency demonstration (By Agency)	X	X	X	X	X	
2	Annual swim demonstration (By Agency)	X	X	X	X		
3	EMS-Advanced 1st Aid & CPR			X	X	X	X
4	EMS-Emergency Medical Technician		X	1	1		
5	EMS-Paramedics/ALS		2				
6	Hazardous Materials	X	X	X	X	X	X
7	Helicopter Operations Awareness*	X	X	X			
8	Helicopter/Aquatic Rescue or equivalent*		4	2			
9	ICS	X	X	X	X	X	X
10	Power Craft Operators Training* per type of craft on team		4	2			2
11	Swift Water/Flood Rescue Operational**					X	
12	Swift Water/Flood Rescue Technician**	X	X	X	X		
13	Rope Rescue Technician**	X	X	X			
14	Search Management	X	X	X			
15	Technical Animal Rescue or equivalent		2	1	1		1
16	Basic SCUBA, w/equipment orientations recommended*		4				

* = Annual Refresher

** = Three (3) year refresher

SF SAR Air Resource Typing

Helicopters staffed by personnel trained in search and rescue operations can be ordered through normal Mutual Aid Request procedures. Specify need such as search platform with lights and infrared detectors, hoist capability, swiftwater capability, etc.

Resource	Component	Types			
		1 (Heavy)	2 (Medium)	3 (Light)	4
Helicopter	Seats w/pilot	– 16	– 10	– 5	– 3
	Useful Load (lbs)	– 5000 lbs	– 2500 lbs	– 1200 lbs	– 600 lbs.
	Examples	– UH-60	– Bell 205, 412	– Bell 206, MD 500E, BO 105	– Bell 47 Does <u>not</u> meet mission requirements for external live load.

<u>HELICOPTER Capability/Mission Selection Sheet</u>	<u>Mission Equipment Selection Sheet</u>
<p>*Communications -VHF Programmable Radios</p> <p>*Over Water Survival Equipment -PFD's for flight crew and passengers,</p> <p><input type="checkbox"/> Live Load *External Load Capable -with rescue equipment <input type="checkbox"/> Hoist <input type="checkbox"/> Short Haul</p> <p><input type="checkbox"/> Sling Load <input type="checkbox"/> Medical: BLS <input type="checkbox"/> Medical: ALS <input type="checkbox"/> Personnel Transportable (number of people) <input type="checkbox"/> Usable Time (mission duration) <input type="checkbox"/> Search/Observation</p> <p>* Mandatory for aircraft</p>	<p><input type="checkbox"/> ALS <input type="checkbox"/> BLS <input type="checkbox"/> Basket (i.e. Stokes type litter) <input type="checkbox"/> Cinch Collar <input type="checkbox"/> Cinch Strap <input type="checkbox"/> FLIR <input type="checkbox"/> Night Illumination (1 million candle power +) <input type="checkbox"/> PA <input type="checkbox"/> Rescue Capture Ball <input type="checkbox"/> Rescue Ring <input type="checkbox"/> Short Haul System <input type="checkbox"/> Sling Load Capability (in lbs.) <input type="checkbox"/> Hoist Load Capability (in lbs.)</p> <p style="text-align: center;">See next page for Pilot and Flight Crew Capabilities</p>

<u>Pilot Capability</u>	<u>Flight Crew Capability</u>
<p>External Load Capable</p> <p><input type="checkbox"/> Victim Location in Static Water</p> <p><input type="checkbox"/> Victim Location in Dynamic Water</p> <ul style="list-style-type: none">• Must be a public service operator, who meets their respective agencies requirement or possesses a USFS, CDF, or OAS (Office of Aircraft Service) valid card.• Pilot must have a minimum of swiftwater/ flood rescue awareness or operational training along with training and experience in helicopter water rescue evolutions.	<p>External Load Capable</p> <p><input type="checkbox"/> Victim Location in Static Water</p> <p><input type="checkbox"/> Victim Location in Dynamic Water</p> <ul style="list-style-type: none">• Air Crew should have a minimum of swiftwater / flood rescue awareness or operational training along with training and experience in helicopter water rescue evolutions. Aircrew performing water rescue operations must complete annual helicopter water rescue training.• Areas to include helicopter orientation and safety, hand signals and communications, water rescue device orientation and operations and any additional individual agency specific or type specific requirements.

SF SAR Decontamination

DECONTAMINATION OF EQUIPMENT AND PERSONNEL:

The following are the recommended decontamination procedures for resources assigned to SF SAR operations. Any resources exposed to flood waters during their operations should complete the appropriate level of decontamination. Consult with qualified Hazardous Materials personnel when available.

Basic Decontamination:**Personnel:**

After completing assignments in floodwaters, hands and face should be washed with clean water and soap. All members should be required to wash hands before entering vehicles and eating areas. Hand washing is essential to reduce secondary contamination.

Equipment:

When the team's operational assignment is completed; equipment should be rinsed with clean water. Visible contaminants, mud and light oils, should be removed with soap.

Level 1 Decontamination:

Level 1 decontamination procedures should be used in areas where there is potential for exposure to general contaminants and the water is standing or moving slowly. Examples of areas where the use of this level of decon is needed would be residential and agricultural areas where there is no evidence of large releases of hazardous materials.

Personnel:

After completing assignment in floodwaters, hands and face should be washed with clean water and anti-microbial soap (i.e., Vionex or PhisoHex). All members should wash their hands before entering vehicles and eating areas. On completion of the day's operations, all members exposed to suspected or known contaminated water should shower and change into clean clothes.

Equipment:

When the team's operational assignment is completed, equipment should be washed with soap and clean water. This decon should be completed as soon as possible following the operations. Dry suits should also be washed before entering vehicles for trips from one work site to another.

Level 2 Decontamination:

Level 2 decontamination procedures should be used any time hazardous materials are identified or likely to be present. These include areas of sewage contamination as well as agricultural and chemical contamination. These areas should not be entered, if possible. Limiting the number of personnel exposed to the water should be the top priority of the Team Leader. Support for decontamination should be arranged before units are committed to the contaminated area. **Water samples should be taken for testing from areas entered by the team.** The Medical Unit should be notified if any personnel require this level of decontamination. All personnel exposed to the contaminates should have a 1 hour, 12 hour, and 24 hour medical check following their exposure.

Personnel:

After exiting the water, even for short periods during the operational period, members should go through a scrub gross decon* wash with soap and clean water. Remove gloves and wash hands and face with clean water and anti-microbial soap. At the end of the duty period, members should go through a gross decon scrub wash with soap and clean water before any safety gear is removed. Wash hands and face with clean water and anti-microbial soap after removing all safety gear. Shower, using anti-microbial soap, before leaving the scene if possible or as soon as possible thereafter and change into clean clothes.

Equipment:

All equipment should be sprayed with bleach solution ** or other agents as recommended by on-scene Hazardous Materials personnel and allowed to stand a minimum of 15 minutes. Thoroughly rinse all treated equipment with clean water and allow to dry before storing with other equipment. Bag any equipment that cannot be dried for the return trip to the base. Wipe with bleach solution** any surfaces inside vehicles that might have come in contact with wet safety equipment during the duty period. Units requiring Level 2 Decontamination should be taken out of service until all equipment has been cleaned and dried.

* Gross Decon Wash: This is a 2-stage process that is set up along a decontamination corridor. All run-off solutions are retained for proper disposal. Persons implementing the corridor should be protected by splash gear. It is recommended that qualified Hazardous Materials personnel be requested to implement this procedure.

Stage 1: Rescuer in safety gear is scrubbed with brushes using a clean water and soap solution. Any contaminated tools are left behind here for cleaning.

Stage 2: Rescuer is rinsed with clean water.

** Bleach Solution: Bleach solution should be made using 30cc of Sodium Hypochlorite 5% (household bleach) for every one gallon of clean water. This will yield a 20,000 ppm solution of bleach.

SF SAR Team Equipment List

Any equipment, beyond that listed herein brought by a responding agency, must be approved for use by the Incident Commander or designee. Should the responding agency fail to receive approval for use, or use of equipment without approval, the responding agency may be required to assume full responsibility for any damage or loss.

# = Minimum (#) = Preferred * = Optional	Swiftwater/flood Search and Rescue Team				FEB
	Type 1	Type 2	Type 3	Type 4	
COMMUNICATIONS					
Aircraft radio	0 (2)	0 (1)	0	0	0
Bags, waterproof, radio	7 (14)	3 (7)	2	2	1
Battery, spare/charger	7 (16)	3 (6)	2	2	1
Headset, waterproof	0 (14)	0 (6)	0 (2)	0	0
Phone, cell	2	1	1*	1*	1*
Radio, portable (waterproof)	7 (16)	3 (6)	2 (4)	2 (3)	1
MEDICAL (Equipment to be carried as per protocol of the responding agency)					
Basic life support medical kit	0	Yes	Yes	Yes	Yes
Advanced life support medical kit	1-2*	0	0	0	0
Emergency blankets	Yes	Yes	Yes	Yes	Yes
Spine board (flotation back board)	2	Yes	0	0	0
Stokes type litter (w/float kits)	2	Yes	Yes	0	0
PERSONAL EQUIPMENT					
Aerial flares	14 (28)	6	4	3	2
Dye markers	14	6	4	3	2
Dry gear bags	Yes	Yes	Yes	Yes	Yes
Dry suit with liner	14	6	Wet or Dry 4	0	Wet or Dry 2
Eye protection	14	6	4	3	2
Fins, pair	8	4	2	0	0 (1)
Flashlight	14	6	4	3	2
Gloves-water	14	6	4	0	2
Gloves-leather	14	6	4	3	2
Helicopter Emergency Escape Device-H.E.E.D.* (or equivalent)	0 (14)	0 (6)	0	0	0

# = Minimum (#) = Preferred * = Optional	Swiftwater/flood Search and Rescue Team				FEB
	Type 1	Type 2	Type 3	Type 4	
Handheld flares	14 (28)	6	4	3	2
Handheld survival strobe light	14	6	4	0 (3)	2
Headlamps, waterproof	14	6	4	0 (3)	2
Helmet, swiftwater	14	6	4	3	2
Helo flotation vest* (USCG approved)	14*	6*	0	0	0
Chemical light sticks	Yes	Yes	Yes	Yes	Yes
PFD, Type V, tethered swimmer (USCG approved)	14	6	2	0	0
PFD, Type III/V (USCG approved)	0	0	2	3	2
Rescue knives	14	6	4	3	2
Smoke marking device	14 (28)	6	4	3	2
Tennis shoes or appropriate water booties	14	6	4	3	2
Whistles	14	6	4	3	2
TEAM EQUIPMENT					
Admin. kit / ICS-agency forms	1	1	1	1	1
Air monitors	0 (2)	0 (1)	0	0	0
Axe / handsaw	2	1	1	1	1
Bail-out system	0 (4)	0	0	0	0
Body bag	4	2	2	2*	2*
Brake bar racks	4	2	1*	0	0
Carabiner, locking "D", steel	40	0	0	0	0
Carabiner, locking "D", aluminum	20	0	0	0	0
Carabiner, locking "D"	0	40	20	12	0
Chainsaw w/kit	1	1	1*	1*	1*
Collection rings	4	2	1*	0	0
Compass	2	2*	1	1*	1
Dust mask, disposable	2 box	2 box	1 box*	1 box*	1 box*
Edge protection	Yes	Yes	Yes	0	0
Eight plates	4	2	2	2*	0
Fire extinguisher	Yes	Yes	0	0	Yes
Filter, water, hand pump	Yes	Yes	Yes*	Yes*	Yes*
FLIR, hand	0 (2)	0 (1)	0	0	0

# = Minimum (#) = Preferred * = Optional	Swiftwater/flood Search and Rescue Team				FEB
	Type 1	Type 2	Type 3	Type 4	
Food/water/sleeping – 24 hours	Yes	Yes	Yes	Yes	Yes
Forcible entry tool	2	1	1	1	1
Fuel cans, transportable	Yes	Yes	Yes	0	Yes
Generator with light attachment	0 (1)	0	0	0	0
GPS, hand held	4	2	2*	2*	2*
Hammer, sledge	2	1	1*	1*	0
Hand held spot	4	2	1	1*	1
Harness, rescuer	14	6	4*	3*	1*
Helmet, victim	4	2	2*	2*	2*
Helo victim lifting device	2	1	0	0	0
Jacket, exposure	2 (12)	0 (6)	0 (4)	0 (3)	0 (2)
Inflatable hose kit (including hose)	2*	1*	1*	1*	0
Knot passing pulleys	2	1	0	0	0
Line thrower	2	1	1*	1*	0
Mask, dive	4*	2*	2*	0	0
Megaphone/PA	1	1	1*	1*	1*
Night vision, hand	2*	1*	1*	1*	1*
Oils, fuels	Yes	Yes	Yes	0	Yes
PFD, Type III, victim assort. (USCG approved)	Yes	Yes	Yes	0	Yes
Pick off straps	0 (4)	0 (2)	0	0	0
Pickets	12	6	6*	6*	0
Pole, reaching (pike or equivalent)	2	1	1	1	1
Prusik's, tandem	12	6	4	2	0
Pulleys	12	6	2	2	0
Repair kits	Yes	Yes	Yes	0	Yes
Rope 200' w/bag	4	2	2	1	0
Rope 300' w/bag	3	2	1	0	0
Rope 600' w/bag	1	1	0	0	0
Compressed air cylinder (hose/IRB inflation)	2*	1*	1*	1*	0
Search dog floatation device	0 (1)	0 (1)	0	0	0
Shovel, hand	2	1	1	1	0

# = Minimum (#) = Preferred * = Optional	Swiftwater/flood Search and Rescue Team				FEB
	Type 1	Type 2	Type 3	Type 4	
Snorkel	4*	2*	2*	0	0
Storage containers, as needed	Yes	Yes	Yes	Yes	Yes
Swimmer rescue board	4	2	2	0	0
Throw bags	14	6	4	3	2
Throw-able flotation device (USCG approved)	2	1	1	1*	1
Victim harness	2	1	1*	0	0
Water sample kit	0 (2)	0 (1)	1*	0	0
Webbing 1" x 5' nylon tubular (green)	20	12	8	4	0
Webbing 1" x 12' nylon tubular (yellow)	20	12	8	4	0
Webbing 1" x 15' nylon tubular (blue)	20	12	8	4	0
Webbing 1" x 20' nylon tubing (orange)	20	12	8	4	0
INFLATABLE RESCUE BOAT (IRB)					
Air, manual inflation pump	2	1	1	0	Yes
Boat, non-powered, 4 person minimum	0	0	1	0	Yes
Fuel, bladder / tank	2	1	0	0	Yes
IRB, 12' minimum	2	1	0	0	0
Kit, patch/repair/maintenance	2	1	1	0	Yes
Lanyard, wrist, kill switch	4 (14)	2 (6)	0	0	Yes
Motor, 30 HP (minimum), prop w/guard	2	1	0	0	Yes
Motor flush kit, "rabbit ears"	2	1	0	0	Yes
Paddles	8	4	4	0	2
Prop, spare	2	1	0	0	Yes

Swiftwater/Flood Search and Rescue Incident Check List

This list is intended to assist first responding public safety personnel with initial management decisions.

- ❑ Utilize SF SAR Personal Protective Equipment
- ❑ Evaluate Incident Needs/Size Up
- ❑ Initiate Preplanned Response
 - Law Enforcement, Fire, EMS resources
 - Specialized SF SAR resources
- ❑ Determine Additional Resource Needs
- ❑ Establish ICS (consider Unified Command)
- ❑ Establish Communication Plan
 - Assign tactical and command channels
 - Identify interagency coordination channel(s)
- ❑ Establish Resource Tracking (Personnel Accountability) System
- ❑ Establish Search/Incident Boundaries
 - Identify incident hazards
 - Establish operational area
 - Manage entry to operational area
 - Limit risk to untrained resources
 - Interview Reporting Party
 - Determine victim(s) last known location
- ❑ Consider Evacuation Plan
- ❑ Consider Traffic Plan/Staging Area(s)
- ❑ Establish Down and Up Stream Safety
- ❑ Implement Search and Rescue Operations
 - Determine Rescue vs. Recovery
 - Evaluate Low to High risk options
 - Develop contingency plans
- ❑ Establish Medical/Multi-Casualty Plan
 - Consider decontamination of victims
- ❑ Establish Logistic Support